STORAGE DEVICE WITH CHARGE TRAPPING STRUCTURE AND METHODS

ABSTRACT

A storage device includes a first semiconducting layer having a p-dopant and a second semiconducting layer having an n-dopant, disposed on the first semiconducting layer forming a junction between the first and the second semiconducting layers. The storage device also includes a charge trapping structure disposed on the second semiconducting layer and a conductive gate, wherein the conductive gate and the charge trapping structure move relative to the other, wherein an electric field applied across the second semiconducting layer and the conductive gate traps charge in the charge trapping structure.